

REMARKS

I. Status of the Claims and the Rejections

Applicants thank Examiner Tapolcai for the telephonic interview conducted with the undersigned counsel on February 16, 2010. In the interview, Examiner Tapolcai acknowledged that newly-submitted claim 43 was inadvertently left unaddressed in an Office Action dated November 16, 2009. Therefore, Examiner Tapolcai agreed to withdraw that Office Action and issue a new Office Action addressing all pending claims.

Claims 22, 24-29, 31, 32, and 34-42 were rejected for alleged obviousness under 35 U.S.C. § 103(a) based on Fischer U.S. Patent No. 5,513,500 ("Fischer") in combination with Foye U.S. Patent No. 4,487,028 ("Foye") and Schuett U.S. Patent No. 3,216,215 ("Schuett"). Claim 43 was treated as withdrawn in the Office Action, because claim 43 is allegedly directed to an independent invention. Applicants have amended claim 22 to further clarify the subject matter regarded as patentable. Applicants have also amended claim 43 to more clearly show the inventive unity of the current claims. In view of these amendments and the following remarks, applicants respectfully request consideration and allowance.

II. Claims 22, 24-29, 31, 32, and 34-42 are Not Obvious

A. The Claims

Claim 22 recites a cooling system including "a refrigerating installation (12) on the aircraft, including at least two refrigeration machines (18, 20) which operate independently of one another in parallel." Claim 22 also recites a conveying pipe including a shut-off valve, "the shut-off valve (29) opening to feed at least a portion of the refrigerating agent from the refrigerating installation (12) by bypassing the at least one refrigeration consumer (44, 46, 48) directly to a pump unit (30) and back to the refrigerating installation (12)." Claim 22 has been

amended to recite that the shut-off valve closes "to force all of the refrigerating agent from the refrigerating installation (12) to the at least one refrigeration consumer (44, 46, 48), the shut-off valve (29) thereby controlling a refrigeration output of the cooling system based on a changing refrigeration requirement." This amendment is fully supported in the original specification at page 8, lines 8-14. Claims 24-29, 31, 32, and 34-42 depend from independent claim 22 and recite additional features of the cooling system.

B. The Deficiencies of the Cited Prior Art

Fischer is directed to a system for cooling food trolleys in the cabin of an aircraft. As shown in Fig. 2, Fischer discloses a central cooling plant (4) located underneath the cabin of an aircraft and selectively coupled to heat exchangers (9A, 9B) in the aircraft galleys via a supply conduit (5) and a return conduit (6). The heat exchangers (9A, 9B) in the galleys are coupled to the supply and return conduits (5, 6) using a plurality of connector conduits (10A, 10B, 11A, 11B). The Office Action acknowledges that Fischer fails to disclose that the central cooling plant includes two refrigeration machines operating in parallel, or a conveying pipe including a shut-off valve which can open to partially bypass the heat exchangers.

However, the Office Action turns to Foye for the teaching of two refrigeration machines (11, 12) operating independently and in parallel (*see* Figure 1). Foye is directed to a method for heating or cooling a building. The Office Action states that it would have been obvious to provide the cooling plant (4) of Fischer with two parallel refrigeration machines as shown in Foye "to yield the predictable result of providing redundant systems in case one system fails."

Applicants disagree, for a number of reasons. First, claim 22 relates to an aircraft. As amended, claim 22 now more clearly recites the aircraft in the body of the claim, by reciting that the refrigerating installation is "on the aircraft." Fischer explicitly teaches that "it is

especially advantageous that a single central cooling plant provides the necessary cooling capacity for all the galleys in the aircraft" because "a considerable saving of space and weight is achieved" in the aircraft (Col. 2, lines 30-36). The Patent Office cannot ignore this express teaching of Fischer. Combining Foye and Fischer in the manner suggested in the rejection would undermine the primary weight-saving benefits of the cooling system disclosed in Fischer. Consequently, it would not have been obvious for a person of ordinary skill in the art to do so, as suggested in the Office Action.

Additionally, the Office Action turns to Schuett for the teaching of a conveying pipe that has a valve. Schuett is directed to a cooling system for incubator-hatchers. As shown in the figure, refrigerant is cooled in a chiller tank (10) and directed through a pump (11) and a coolant supply line (12) to the incubator-hatchers (3, 4). The refrigerant is then returned to the chiller tank (10) through a coolant return line (17). Schuett also provides a coolant by-pass line (13) connecting the coolant supply line (12) directly to the coolant return line (17). The coolant by-pass line includes a pressure regulator valve (13a) that by-passes coolant from flowing through the incubator-hatchers when the pressure in the coolant supply line (12) exceeds a threshold of 35 pounds. Thus, the pressure regulator valve (13a) maintains a constant operating condition for the incubator-hatchers (3, 4).

In contrast, claim 22 now recites that the shut-off valve may open and close to direct at least a portion of the refrigerating agent from the refrigerating installation to either bypass or flow through the refrigeration consumer. Claim 22 also recites that the shut-off valve is "controlling a refrigeration output of the cooling system based on a changing refrigeration requirement." While the shut-off valve permits the cooling system to operate under different refrigeration requirements, the pressure regulator valve (13a) of Schuett maintains a constant refrigerant pressure only in the refrigeration consumers. In other words, the currently-claimed

shut-off valve modifies the refrigeration output of the cooling system, but the valve (13a) of Schuett performs the opposite function of maintaining a constant cooling output of the cooling system. Thus, combining Fischer, Foye, and Schuett in the manner suggested in the Office Action would not result in the subject matter recited in claim 22. Such a combination would not have a cooling system that includes a shut-off valve in a conveying pipe that can accommodate changing refrigeration requirements by directing at least a portion of the refrigerating agent to either bypass or flow through the refrigeration consumer.

Applicants also observe that the corresponding patent application of the present application (EP 1,704,091) in the European Patent Office ("EPO") was allowed on March 11, 2009 with claims consistent with the scope of the current independent claims. A copy of this corresponding EPO application accompanies this response. The USPTO and the EPO currently cooperate in the Patent Prosecution Highway, to more quickly allow applications allowed in one patent office to be allowed with similar claims in the other patent office. The EPO did consider the Fischer reference, but nevertheless found claims of analogous scope to be allowable over Fischer. Although the Patent Prosecution Highway does not apply to the current case because the USPTO prosecution started before the EPO allowance, applicants respectfully request that the USPTO consider the EPO allowance, and also follow the spirit of the Patent Prosecution Highway during reconsideration of these rejections. Furthermore, Fischer is co-owned by the assignee of the current application, and the European counterpart of Fischer was cited in the background of the current application.

For at least these reasons, claim 22 is allowable over the cited combination of Fischer, Foye, and Schuett. Each of claims 24-29, 31, 32 and 34-42 depends from independent claim 22, and recites one or more additional features in combination with the features of claim 22. For substantially the same reasons set forth above with respect to claim 22, and further

because the relied upon prior art does not support an obviousness rejection as to any of these combinations of elements, each of claims 24-29, 31, 32 and 34-42 is also patentable. Applicants respectfully request that the rejection of claims 22, 24-29, 31, 32, and 34-42 be withdrawn.

III. Claim 43 should not be Withdrawn and is Allowable

Claim 43 recites a method of cooling heat generating installations in an aircraft. The method includes "coupling at least two refrigeration machines in parallel to a refrigeration transport system in the aircraft" and "operating the at least two refrigeration machines for an equal amount of time on average." As noted above, the Office Action has treated claim 43 as withdrawn for allegedly being directed to a non-elected independent invention from claim 22. Applicants have amended claim 43 to more specifically recite the same structural elements as claim 22, thereby harmonizing the claim scope and overcoming the treatment of claim 43 as withdrawn.

Moreover, claim 43 is allowable because Fischer, Foye, and Schuett are completely silent about operating two refrigeration machines for an equal amount of time on average. There is absolutely no suggestion or teaching of this recited method in any of these cited references. For at least these reasons, applicants respectfully request that claim 43 be allowed.

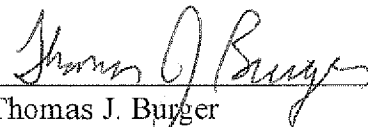
IV. Conclusion

Based on the amendments to the claims and these remarks, applicants respectfully asserts that all present claims are in condition for allowance, and respectfully requests an allowance without further delay.

It is believed that no fee is due for this filing. If any fee is deemed due, consider this as an authorization to charge Deposit Account 23-3000 therefore.

Respectfully submitted,

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Date


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